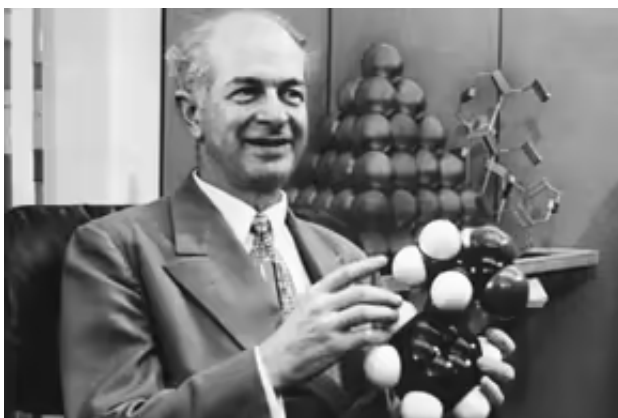


# Orthomolecular Medicine

By: [Shanna Freeman](#)

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Linus loved his molecules.

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What's the first thing you do when you think you might be getting a [cold](#)? For many of us, it's popping some vitamin C or drinking it in the form of orange juice, in the hopes that we can stave off the cold or at least reduce its severity. But what if someone -- a double Nobel Prize laureate, perhaps -- told you that taking lots of vitamin C may prevent [heart attacks](#) and [strokes](#), or even help to prolong the life of a cancer patient? Taking megadoses of vitamins as a means for preventing or treating illnesses is part of a branch of complementary and alternative medicine (CAM) that you may have never heard of: **orthomolecular medicine**.

The term "orthomolecular medicine" was coined in 1968 by Dr. Linus Pauling, a chemist and biochemist best known for his work on the nature of chemical bonds and the structure of molecules. "Ortho" is Greek for "right", so Pauling came up with the

name to mean "the right substances in the right amounts." Pauling's 1970 book "Vitamin C and the Common Cold" is credited with making it accepted practice to take vitamin C for the common cold. Although Pauling was the first to give it a name, orthomolecular medicine has been around in practice since the 1930s. The basic theory is that some of us have imbalances of one or more substances that we already have in our bodies, such as vitamins, minerals, hormones or amino acids (even if we aren't exhibiting the traditional signs of a deficiency). The imbalance, advocates reason, can lead to illness, so correcting it will prevent or cure the illness.

Orthomolecular medicine is a controversial field; many traditional medical organizations say there's no proof that it works, and it's often been called quackery, fad medicine or even dangerous. Intrigued? Next, we'll delve more into the origins of orthomolecular medicine and what it means to be evaluated by an orthomolecularist.

## Orthomolecular Treatment

Many people start applying the concepts of orthomolecular medicine after researching it on their own, and begin taking supplements without a doctor's advice (which is rarely a good idea). It is possible to find a doctor who practices it, although it's a small field. Some may also practice other forms of complementary and alternative medicine (CAM), although many practitioners claim that orthomolecular medicine is different because it is rooted in biology and can be tested using the scientific method.

Pauling and other orthomolecular researchers base their assertions on their own studies, which they claim show the complex interactions that take place in our bodies between substances like vitamins and other biochemical compounds like enzymes and hormones. Dr. F. R. Klenner was one of the first doctors to put this concept to use when he began prescribing megadoses of vitamin C to polio patients in 1948. Afterward, they were able to walk again [Source: [Saul](#)]. He writes of treating people with [diabetes](#), leukemia, multiple sclerosis and other diseases with a regimen of

vitamins and minerals as well as a special diet. Dr. Klenner is quoted in the Journal of Orthomolecular Medicine as saying that "some physicians would stand by and see their patient die rather than use ascorbic acid because in their finite minds it exists only as a vitamin."

If you went to an orthomolecularist with a specific complaint, he or she would start by giving you a physical exam and taking your medical history, including an extensive discussion of your diet and lifestyle, as well as your symptoms. Then, the practitioner would draw blood and have it tested for levels of different vitamins, minerals or other substances, depending on your complaint. For example, many orthomolecular practitioners believe that large doses of vitamin E can prevent or even treat cardiovascular disease. If you've been diagnosed with that disease, then he may check your vitamin E levels. These results help to establish a baseline, although some will contend that blood test results are not 100 percent accurate because they don't reflect the levels of nutrients in our organs.

After evaluation comes treatment. Next, find out why orthomolecularists often prescribe vitamins in doses that far exceed what the U.S. Department of Agriculture (USDA) recommends.

## Linus Pauling's Legacy

In 1954, Pauling won a Nobel Prize in Chemistry for his work on chemical bonds. Eight years later, he won a Nobel Peace Prize for his anti-nuclear armament work, making him the only person to win two unshared Nobel Prizes. In the 1950s, he began studying brain enzymes, theorizing that an imbalance or dysfunction might be the cause of mental illness. In the 1960s, Pauling moved on to

championing vitamin C (and other vitamins and supplements) as a prevention and cure for numerous diseases, authoring many studies and books on the subject. Today, the Linus Pauling Institute at Oregon State University continues research to "determine the function and role of vitamins and essential minerals (micronutrients) and chemicals from plants (phytochemicals) in promoting optimum health and preventing or treating disease."

## Orthomolecular Nutrition

Can massive doses of vitamins and supplements cure what ails you?

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Following an orthomolecular treatment plan may mean changing your diet; many doctors use the paleolithic diet, which emphasizes meat, fish, produce and nuts while excluding dairy, sugar, fats and grains. Orthomolecularists claim that our ancestors did not suffer from the same types of degenerative disease that modern humans do because they ate unprocessed food, free of chemicals, additives and other toxins. Depending on your diagnosis, your doctor may also suggest other dietary changes to eliminate potential food allergens (which some believe can cause diseases like

asthma and arthritis).

You may also be prescribed a regimen of vitamins, minerals, enzymes, amino acids, probiotics, hormones or other supplements, depending on your condition and the results of your blood tests. This is often known as nutrient therapy, and it may include taking supplements in excess of the Recommended Dietary Allowances (RDA) set forth by the USDA, known as megadoses. Orthomolecular medicine claims that these values are for healthy, normal people, and that people who are ill may need larger doses to get healthy.

Orthomolecularists often treat by titration, meaning that they adjust the amount and frequency of the therapy as necessary to fine-tune the treatment plan. Treatment will also vary from person to person, because advocates contend that we each have unique biochemistries that are influenced by genetic variability. The perfect level of a nutrient for one person, for example, may be too low in another. One person may lack the ability to absorb or effectively process a specific vitamin or mineral.

An orthomolecular treatment plan may also include undergoing detoxification, such as chelation therapy, which is supposed to remove heavy metals from the body.

Advocates believe that high levels of copper, for example, are associated with behavioral and learning disorders in children as well as schizophrenia. Treating mental illness is actually considered a separate speciality within orthomolecular medicine.

Read on to discover how practitioners claim to be able to treat or even cure psychiatric disorders.

## Orthomolecular Psychiatry

Treating mental illness using orthomolecular principles is as old as the discipline itself. Biochemist and psychiatrist Abram Hoffer began treating his schizophrenic patients with niacin and other vitamins in the 1950s. Dr. Carl Pfeiffer continued his work,

treating not only schizophrenic patients but also those with [bipolar disorder](#). Pfeiffer and his colleagues claimed that many of these patients had abnormal levels of trace metals as well as high basophil levels (a type of white blood cell that increases with allergic reactions) and high histamine levels (compounds that trigger inflammatory responses to foreign agents like allergens).

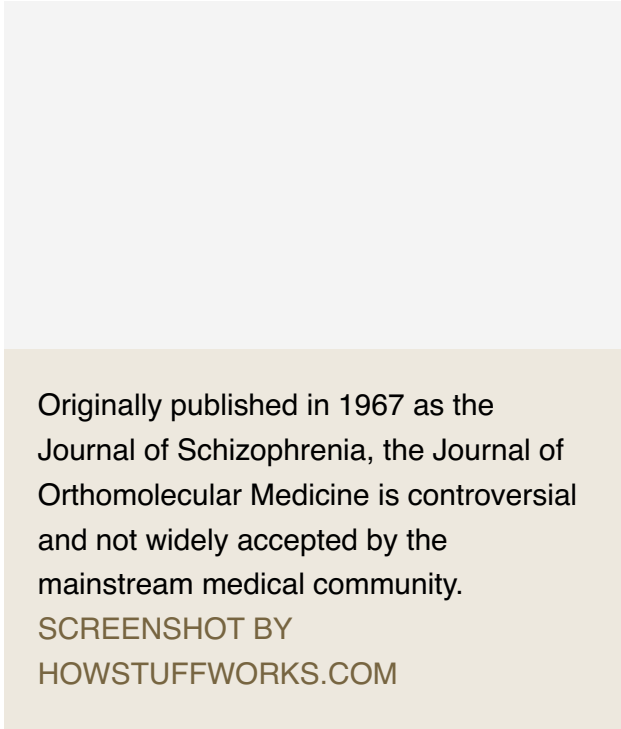
The latter two findings led Pfeiffer and other orthomolecular psychiatrists to believe that many mental illnesses are caused by food allergies and can be treated by identifying and omitting the food in question, which is typically dairy, wheat or meat. Other potential causes include heavy-metal toxicity (allegedly due to metal dental fillings) as well as hypoglycemia (low blood sugar).

Orthomolecular psychiatrists have also diagnosed psychiatric patients with conditions not recognized by the mainstream medical community. These include histadella, which is the name for high histamine and basophil levels. Dr. Pfeiffer believed that histadella caused [depression](#), and he treated patients with this condition using megadoses of vitamin B-6 and methionine, an essential amino acid. Pyroluria is a broader condition, which supposedly can cause everything from alcoholism to autism. It's a biochemical imbalance caused by an abnormality in the way the body makes hemoglobin (the protein that maintains iron levels in red blood cells). Practitioners claim that pyroluria leads to a deficiency in zinc and vitamin B6, so supplements of these are used in treatment along with other supplements.

Weaning psychiatric patients completely from their traditional medications is the goal of orthomolecular psychiatrists. Many of them quote Dr. Pfeiffer's Law, which states that "for every drug that benefits a patient, there is a natural substance that can achieve the same effect" [Source: [Orthomolecular.org](https://orthomolecular.org)]. However, most believe that orthomolecular treatments can be used in conjunction with traditional medication, maintaining that once the biochemical imbalance is corrected, patients will probably be able to reduce or completely stop their medications.

As you might imagine, orthomolecular medicine in general is very controversial among the mainstream medical community. In turn, advocates of orthomolecular medicine claim that their findings have been suppressed. Next, we'll see why some mainstream doctors claim that orthomolecular medicine is dangerous.

## Orthomolecular Controversy



Originally published in 1967 as the Journal of Schizophrenia, the Journal of Orthomolecular Medicine is controversial and not widely accepted by the mainstream medical community.

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The mainstream medical community was discounting claims made by practitioners of orthomolecular medicine and calling the therapies dangerous even before Dr. Pauling coined the name. For example, Dr. Max Gerson, a doctor who claimed in the 1920s that he could [cure cancer](#) and other diseases through a special program called Gerson Therapy, was quickly discredited by organizations like the American Medical Association, the National Cancer Institute, and the American Cancer Society. Several people died as a result of his therapy. A more recent case took place in South Africa in the mid-2000s. Dr. Matthias Rath claimed that the antiretroviral drugs used to treat patients with [AIDS](#) were poisonous and his vitamin supplements could cure the disease. He conducted illegal vitamin trials on AIDS patients there, after which many of them died. Rath was criticized by medical organizations worldwide and faced

lawsuits.

While those are extreme examples, critics state that there is no evidence, other than anecdotes from patients, to support the vast majority of claims made by orthomolecularists. Their therapies have generally not been submitted for independent rigorous, scientific testing, while their own studies do not follow traditional procedures, are too small and are inconclusive. Orthomolecularists also use diagnostic tests that are not accepted as valid by the scientific community, such as analyzing strands of the patient's hair to determine levels of specific vitamins and minerals. Overall, orthomolecular medicine is considered unscientific, unsound and potentially dangerous by mainstream medicine.

The community of orthomolecularists claim that nobody has died in the past 10 years from taking vitamin supplements, while the same can't be said for conventional drug therapies. They also point to the fact that some vitamins are used in megadoses as treatment for certain conditions in mainstream medicine. However, many also believe that mainstream medicine is suppressing their findings. Dr. Abram Hoffer, an orthomolecular psychiatrist, states that medical professionals and their organizations will "protect their hard earned orthodoxy no matter what the cost to their opponent physicians or to their patients" [source: [Hoffer](#)]. The Journal of Orthomolecular Medicine was supposedly founded because researchers had a difficult time publishing in mainstream medical journals, and orthomolecularists claim that some of their colleagues have lost their medical licenses for their views.

Whether orthomolecular medicine presents viable treatment options for disease or it's just quackery and snake oil, it doesn't appear to be going anywhere after more than 40 years in existence. As for that vitamin C you're taking to help you deal with the common cold, it all depends on who you believe.

## **Lots More Information**



## Related Articles

- Ultimate Minerals and Supplements Quiz
- [Top 5 Anti-aging Vitamins](#)
- 5 Ways Nutrigenomic Diets Could Help You

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